

Abstract

A system and method for selecting a best match of a received input signal from a set of candidate signals, wherein two or more of the candidate signals are uncorrelated. In a preprocessing phase a unified signal transform (UST) is determined from the candidate signals. The UST converts each candidate signal to a generalized frequency domain. The UST is applied at a generalized frequency to each candidate signal to calculate corresponding generalized frequency component values (GFCVs) for each candidate signal. At runtime, the input signal of interest is received, and the UST is applied at the generalized frequency to the input signal of interest to calculate a corresponding GFCV. The best match is determined between the GFCV of the input signal of interest and the GFCVs of each of the set of candidate signals. Finally, information indicating the best match candidate signal from the set of candidate signals is output.